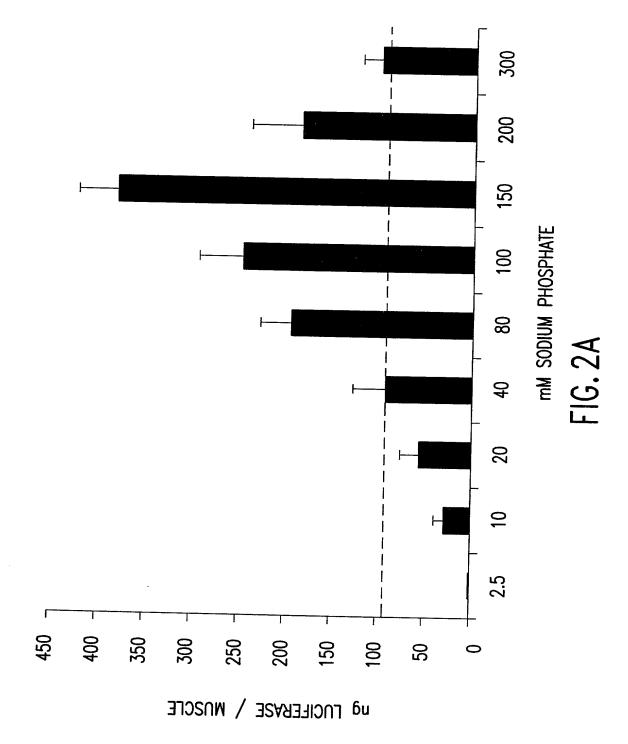
Sheet 1 of 32

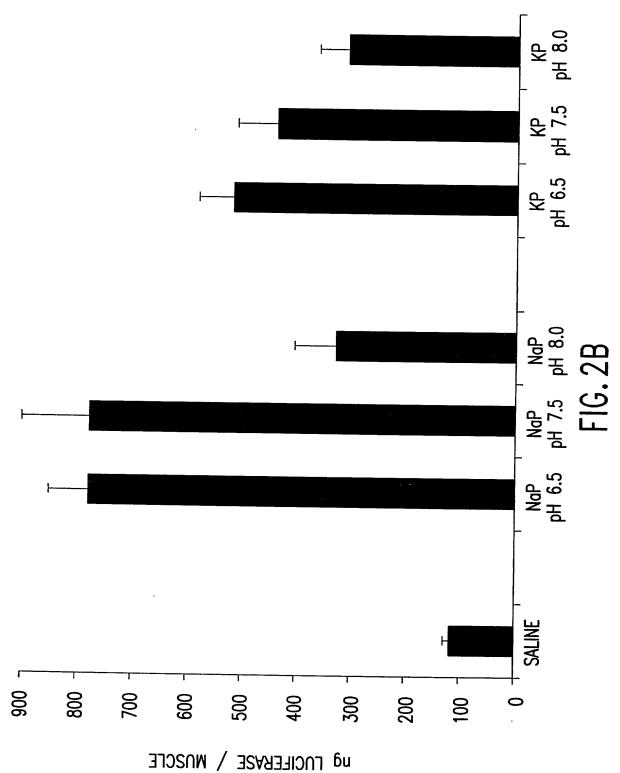
ppl. No. 09/839,574; Group Art Unit: 1646 kt. No. 1530.0180002/EKS/EJH; nventors: Manthorpe et al; Tel: 202/371-2600 itle: Compositions and Methods for in vivo Delivery of olynucleotide-Based Therapeutics

PLASMID NAME	GENE	PARENTAL PLASMID	PROMOTOR/ ENHANCER	' TERMINATOR
VR1223	FIREFLY LUX	VR1012*	CMV	BGH
VR1412	BACTERIAL LACZ	VR1012*	CMV	BGH
VR2901	MOUSE EPO	VR1012*	CMV	BGH
VR2996	MOUSE EPO	VR1012	MV/Desmin	BGH
VR3301	HUMAN SEAP	VR1012*	CMV	BGH
VR3502	RAT PROINSULIN	VR1012*	CMV	BGH
VR4151	HUMAN IFN-OMEGA	VR1055	CMV	mRBG
VR4700	INFLUENZA NP	VR1255**	CMV	mRBG
VR1418	BACTERIAL LACZ	VR1043	RSV	BGH
VR1255	FIREFLY LUX	VR1223	CMV	mRBG
INTERMEDIATE PLASMIDS				
VR1012	NONE	V1J***	CMV	BGH
VR1043	NONE	VR1343	RSV	BGH
VR1055	NONE	VR1255	CMV	mRBG

FIG.1

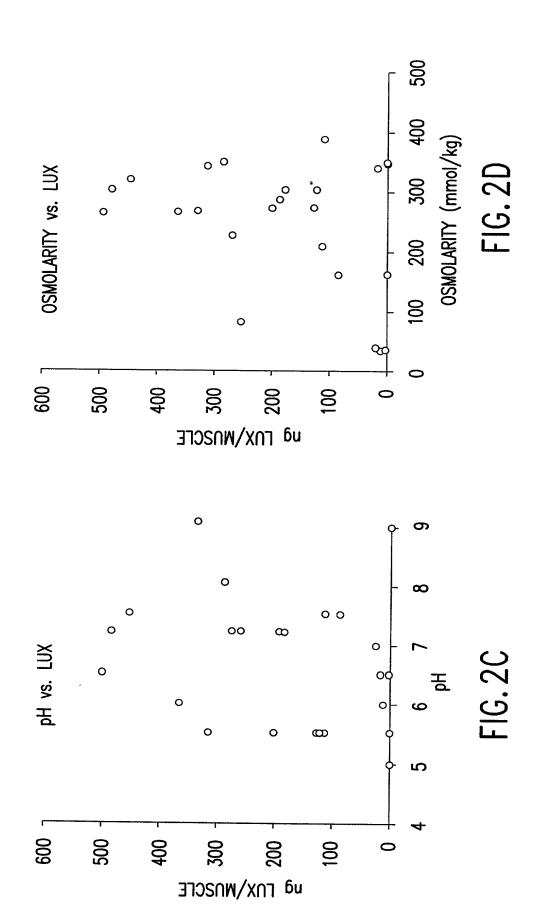


Appl. No. 09/839,574; Group An Unit: 1646
DR. No. 1530.0180002/EKS/EH;
Inventors: Manthorpe &t al.; Tel: 202/371-2600
Polynucleotide-Based Therapeutics
of



Appl. No. 09/839,574; Group Art Unit: 1646
DRt. No. 1530.0180002/EKS/EH;
Inventors: Manthorpe et al.; 7 lei: 202/371-2600
Title: Compositions and Methods for in vivo Delivery o
Polynucleotide-Based Therapeutics

ppl. No. 09/839,574; Group Art Unit: 1646 kt. No. 1530.0180002/EKS/EJH; nventors: Manthorpe et al.; Tel: 202/371-2600 itle: Compositions and Methods for in vivo Delivery of olynucleotide-Based Therapeutics



Sheet 5 of 32

Appl. No. 09/839,574; Group Art Unit: 1646
Dkt. No. 1530.0180002/EKS/EJH;
Inventors: Manthorpe et al.; Tel: 202/371-2600
Title: Compositions and Methods for in vivo Delivery of Polynucleotide-Based Therapeutics

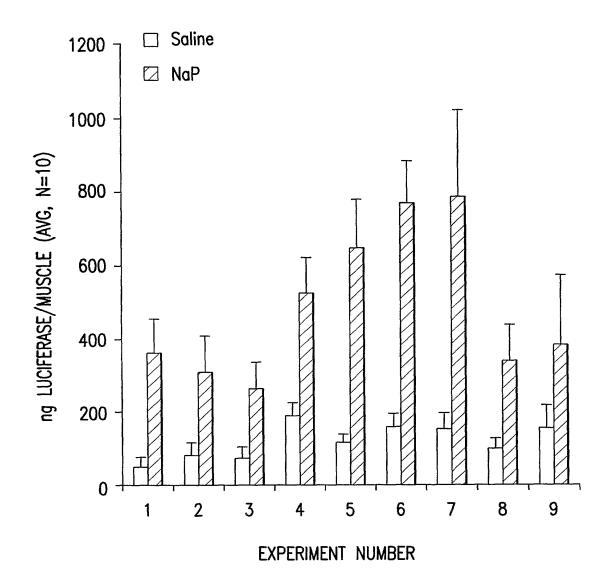
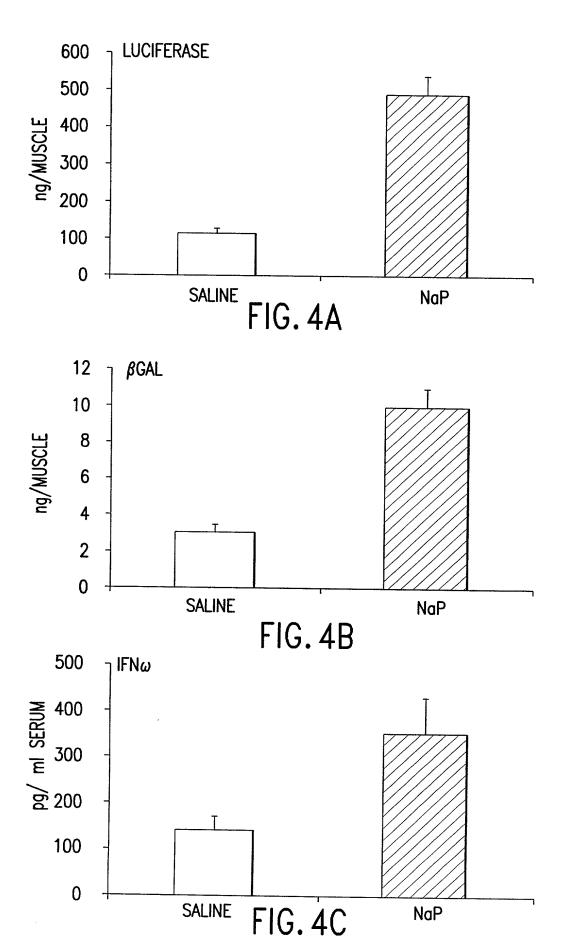
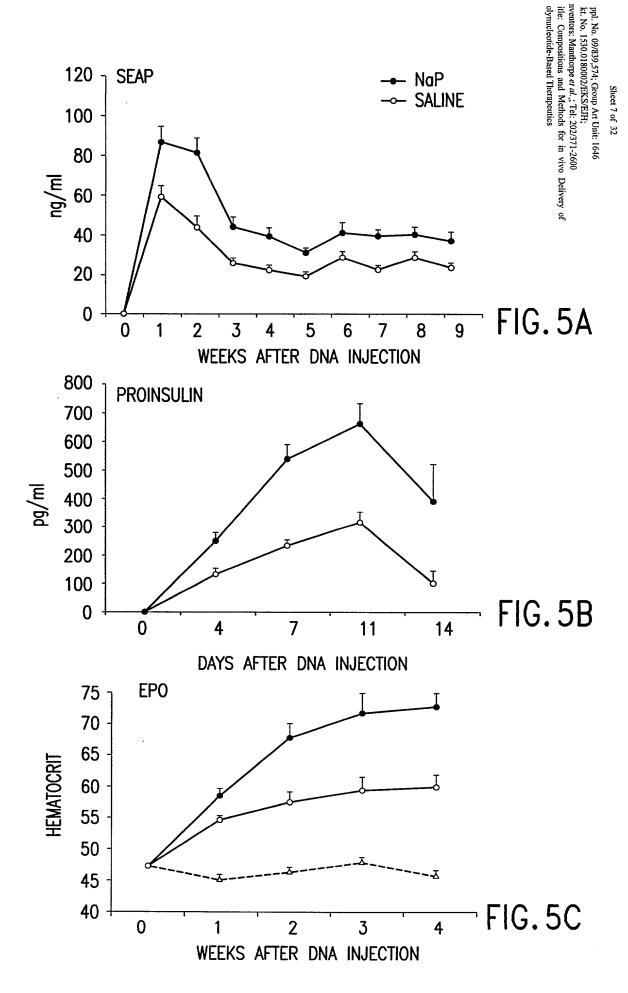


FIG.3





Appl. No. 09/839,574; Group Art Unit: 1646
Dkt. No. 1530.0180002/EKS/EJH;
Inventors: Manthorpe et al.; Tel: 202/371-2600
Title: Compositions and Methods for in vivo Delivery of Polynucleotide-Based Therapeutics

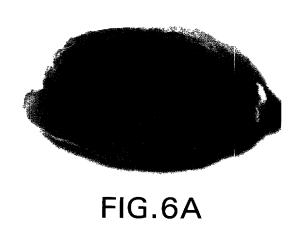




FIG.6B





FIG.6C

FIG.6D

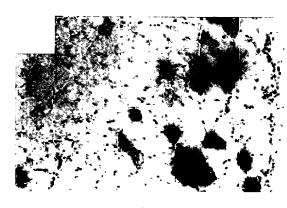


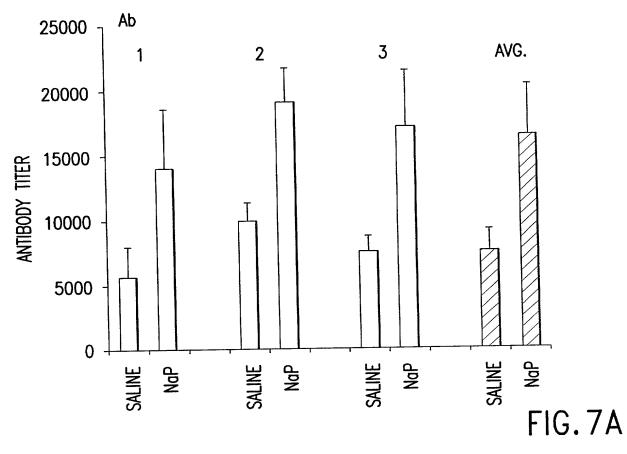


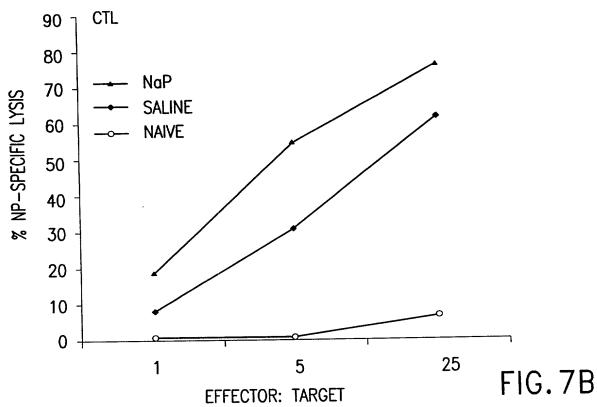
FIG.6E

FIG.6F

Appl. No. 09/839,574; Group Art Unit: 1646 Dkt. No. 1530.0180002/EKS/EJH; Inventors: Manthorpe *et al.*; Tel: 202/371-2600

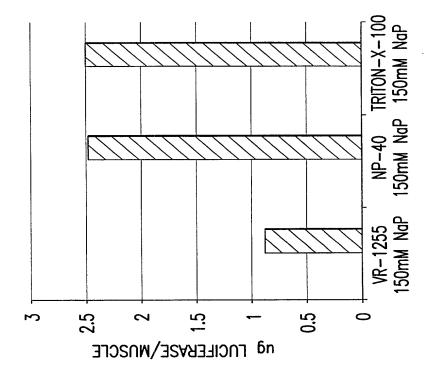
Title: Compositions and Methods for in vivo Delivery o Polynucleotide-Based Therapeutics



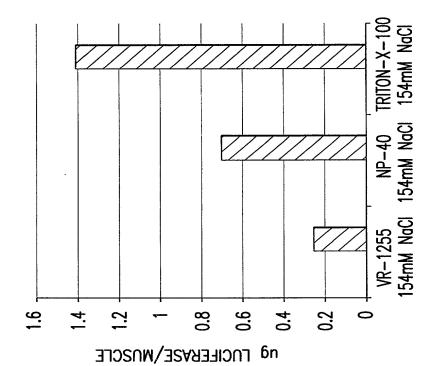


Appl. No. 09/839,574; Dkt. No. 1530,0180002 Inventors: Manthorpe Title: Compositions at Polynucleotide-Based T





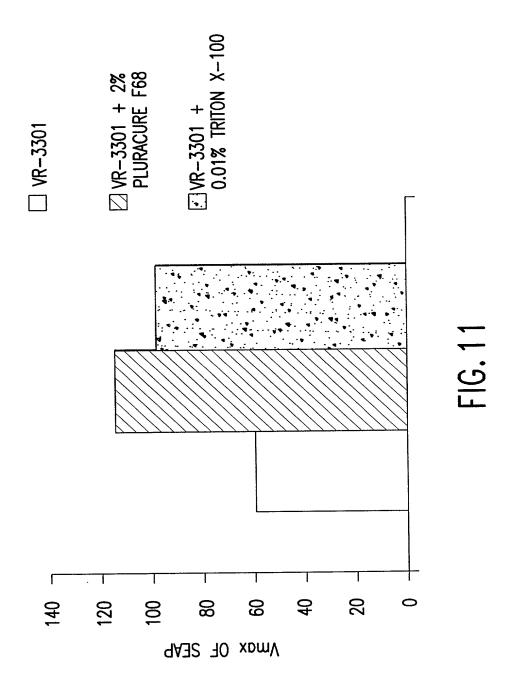
F 6.9



P104
IRITON X-1(
NP-40
L81
P103
P105
F108
L121
P65
L31
F68
L64
25R4
L101
L64
L101
L62
25R2

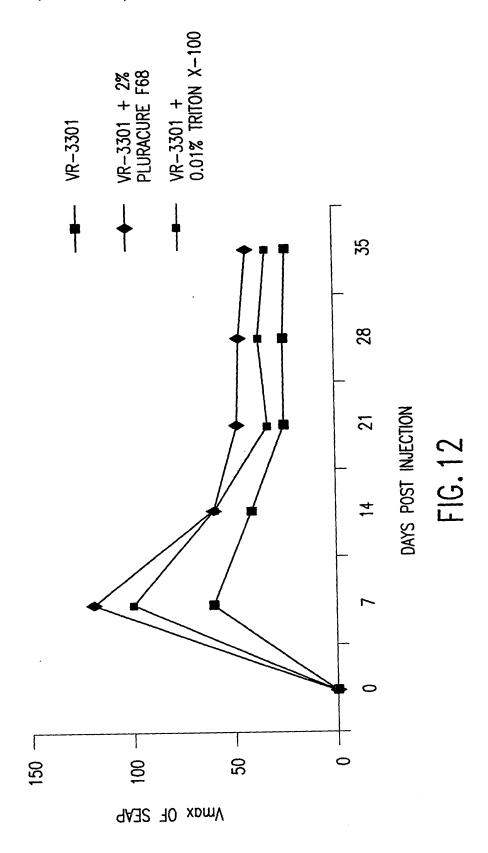
Sheet 13 of 32

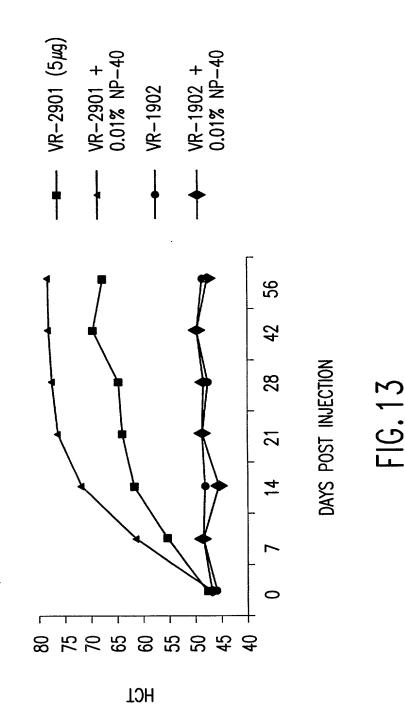
ppl. No. 09/839,574; Group Art Unit: 1646 kt. No. 1530.0180002/EKS/EJH; nventors: Manthorpe et al.; Tel: 202/371-2600 itle: Compositions and Methods for in vivo Delivery of olynucleotide-Based Therapeutics



Sheet 14 of 32

Appl. No. 09/839,574; Group Art Unit: 1646
Dkt. No. 1530,0180002/EKS/EJH;
Inventors: Manthorpe et al.; Tel: 202/371-2600
Title: Compositions and Methods for in vivo Delivery of Polynucleotide-Based Therapeutics

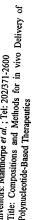


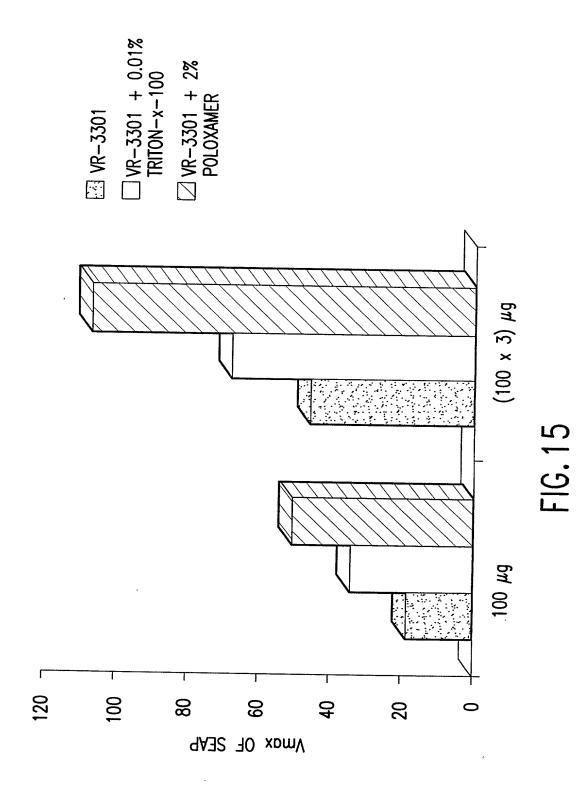


Appl. No. 09/839,574; Group Art Unit: 1646
DR. No. 1530.0180002/EKS/EJH;
DR. No. 1530.0180002/EKS/EJH;
DR. No. 1530.0180002/EKS/EJH;
DR. No. 1530.0180002/EKS/EJH;

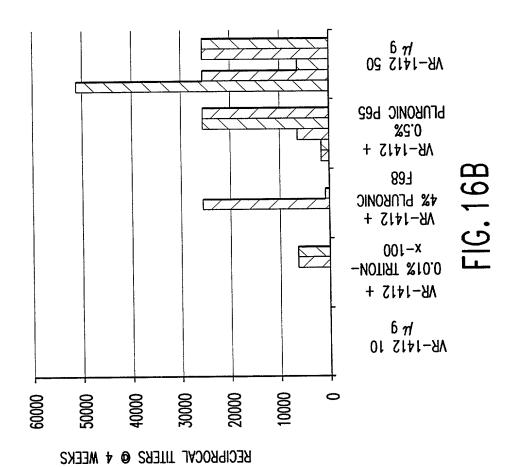
Sheet 16 of 32

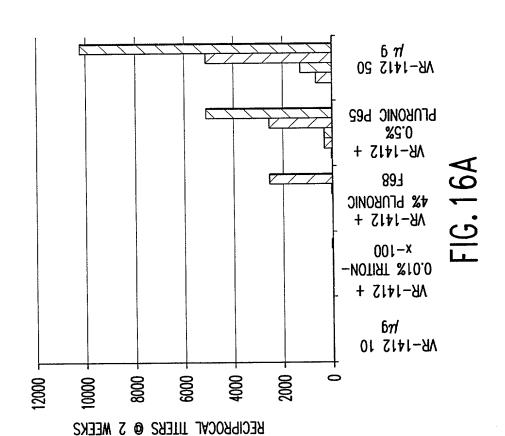
Appl. No. 09/839, 574; Group Art Unit: 1646
Dkt. No. 1530.0180002/EKS/EJH;
Inventors: Manthorpe et al.; Tel: 202/371-2600
Title: Compositions and Methods for in vivo Delivery of Polynucleotide-Based Therapeutics

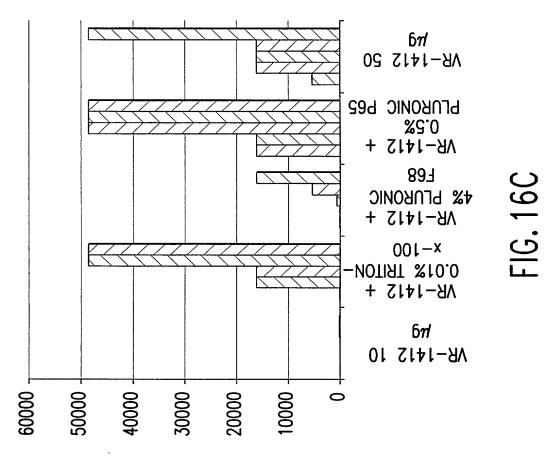




Appl. No. 09/839,574; Group Art Unit: 1646
Dkt. No. 1530.0180002/EKS/EJH;
Inventors: Manthorpe et al.; Tel: 202/371-2600
Title: Compositions and Methods for in vivo Delivery o
Polynucleotide-Based Therapeutics







**BECILBOOCAL TITERS @ 10 WEEKS** 

ppl. No. 19839,574; Group Ari Unit: 1646 kt. No. 1530.0180002/EKS/EHJ; nventors: Manthorpe et al.; 7 lel: 202/371-2600 itle: Compositions and Methods for in vivo Delivery of olynucleotide-Based Therapeutics

CTL ACTIVITY IS NOT INHIBITED WHEN PDNA + POLOXAMER IS ADMINISTERED

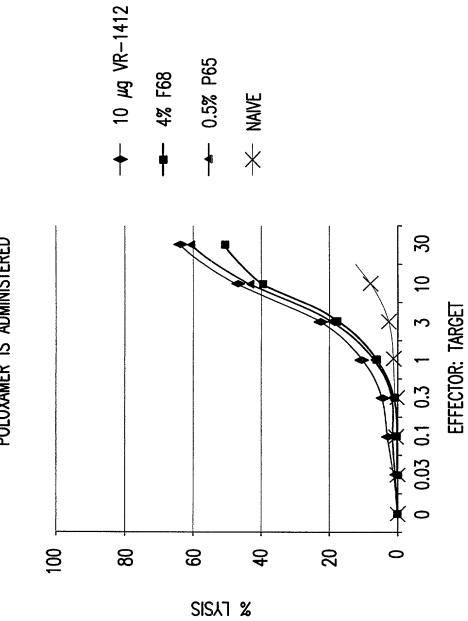
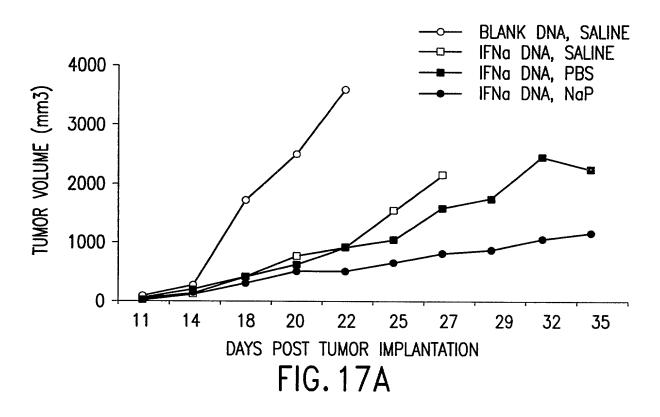


FIG. 16D

Appl. No. 09/839,574; Group Art Unit: 1646
Dkt. No. 1530.0180002/EKS/EJH;
Inventors: Manthorpe et al.; Tel: 202/371-2600
Title: Compositions and Methods for in vivo Delivery of
Polynucleotide-Based Therapeutics

Appl. No. 09/839,574; Group Art Unit: 1646
Dkt. No. 1530.0180002/EKS/EJH;
Inventors: Manthorpe et al.; Tel: 202/371-2600
Title: Compositions and Methods for in vivo Delivery o
Polynucleotide-Based Therapeutics

## CLE EFFECTS ON IFNw pDNA MEDICATED ANTI-TUMOR EFFICACY



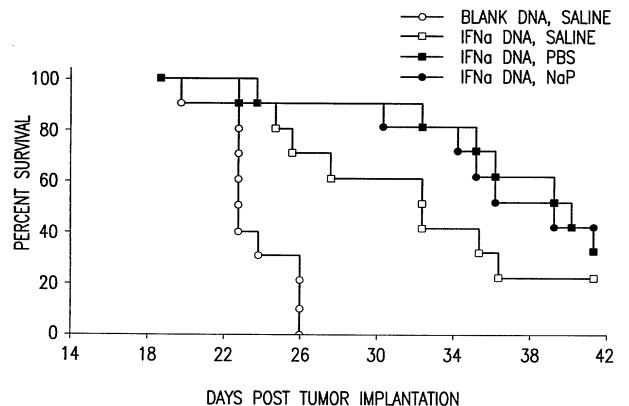
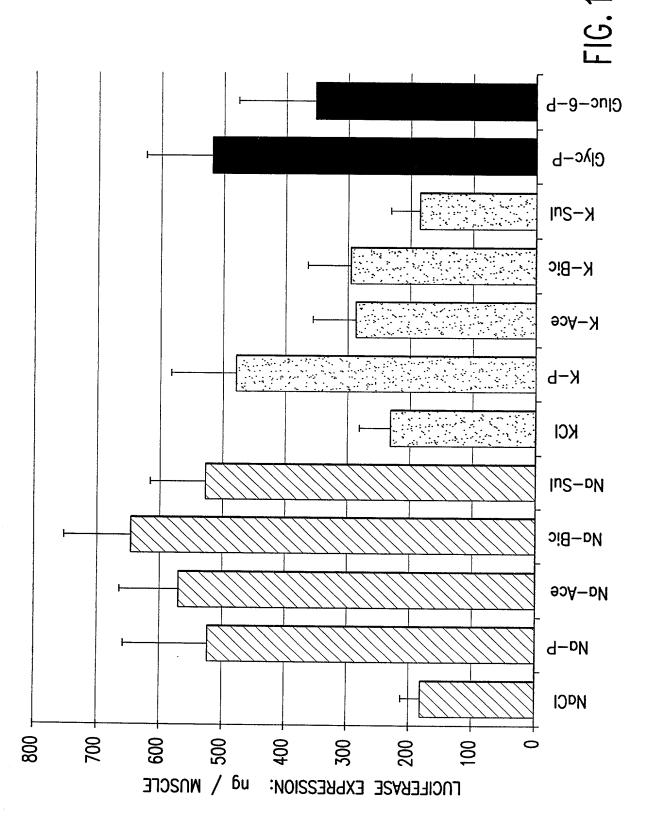
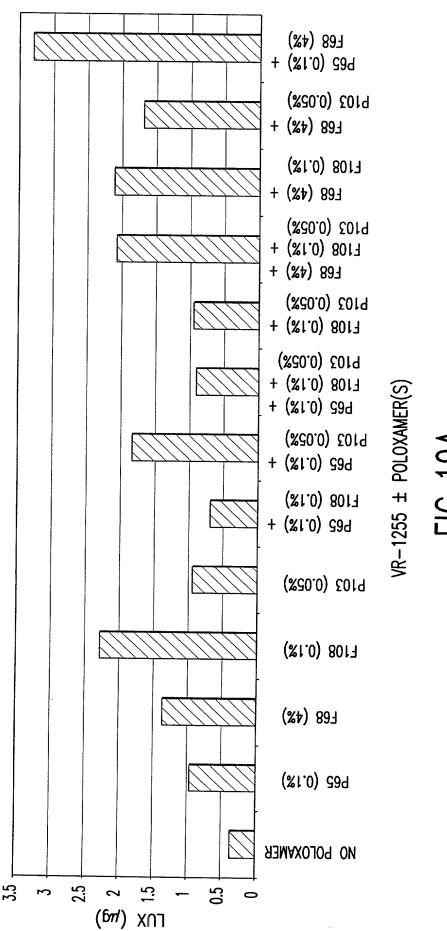


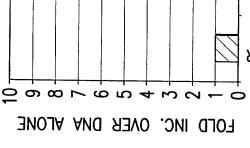
FIG. 17B

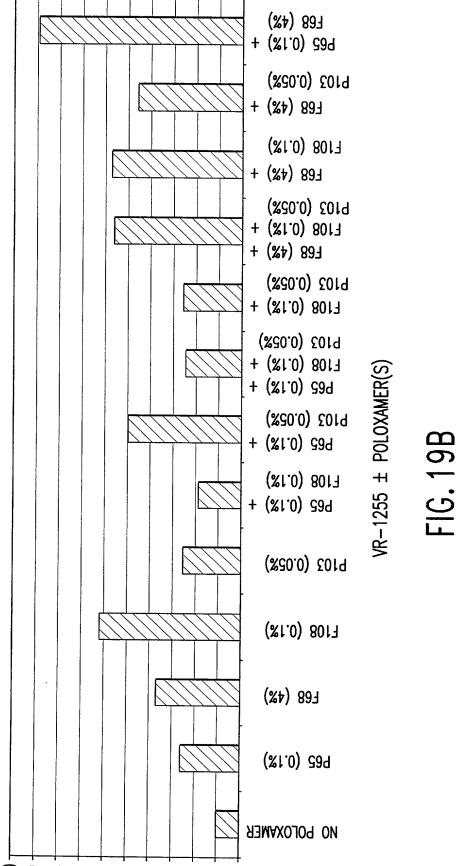


ppl. No. 09/839,574; Group Art Unit: 1646 kt. No. 1530.0180002/EKS/EH; nventors: Manthorpe et al.; Tel: 202/371-2600 itle: Compositions and Methods for in vivo Delivery of obynucleotide-Based Therapeutics

Appl. No. 09/839,574; Group Art Unit: 1646
Dkt. No. 1530.0180002/EKS/EJH;
Inventors: Manthorpe et al.; Tel: 202/371-2600
Title: Compositions and Methods for in vivo Delivery of Polynucleotide-Based Therapeutics





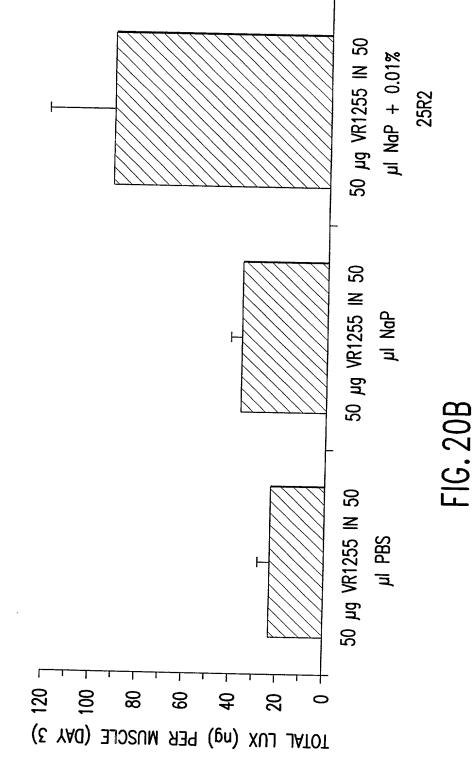


10µg VR1255 + 4% F68 DAY 3 LUCIFERASE EXPRESSION AFTER INTRAMUSCULAR ADMINISTRATION OF VR1255 ± POLOXAMER (F68) FIG. 20A 10µg VR1255 IN 10µl 150mM NaP 20 15 9 2 0 TOTAL LUX (ng) PER MUSCLE (DAY 3)

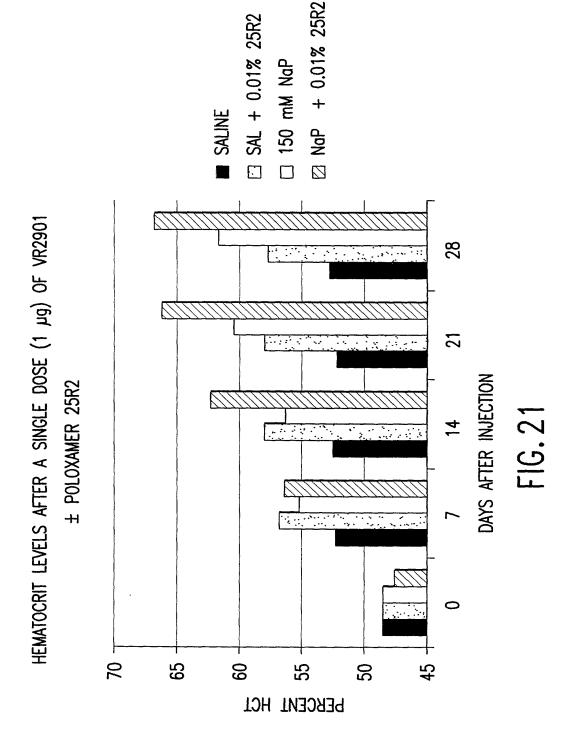
ppl. No. 19839,574; Group Art Unit: 1646 kt. No. 1530,0180002/EKS/EJH; nventors: Manthorpe et al. ; Tel: 202/371-2600 itle: Compositions and Methods for in vivo Delivery of olynucleotide-Based Therapeutics

Sheet 25 of 32

DAY 3 LUCIFERASE EXPRESSION AFTER INTRAMUSCULAR ADMINISTRATION OF VR1255 ± POLOXAMER (25R2)



Appl. No. 09/839,574; Group Art Unit: 1646
DRt. No. 1530.0180002/EKS/ETH;
Inventors: Manthorpe et et. 41; 7:ei: 202/371-2600
Title: Compositions and Methods for in vivo Delivery of polymucleotide-Based Therapeutics



Appl. No. 09/839,574; Group Art Unit: 1646
Dkt. No. 1530.0180002/EKS/EJH;
Inventors: Manthorpe et al.; Tel: 202/371-2600
Title: Compositions and Methods for in vivo Delivery o
Polynucleotide-Based Therapeutics

ppl. No. 09/839,574; Group Art Unit: 1646 kt. No. 1530.0180002/EKS/EJH; nventors: Manthorpe et al.; Tel: 202/371-2600 itle: Compositions and Methods for in vivo Delivery of olynucleotide-Based Therapeutics

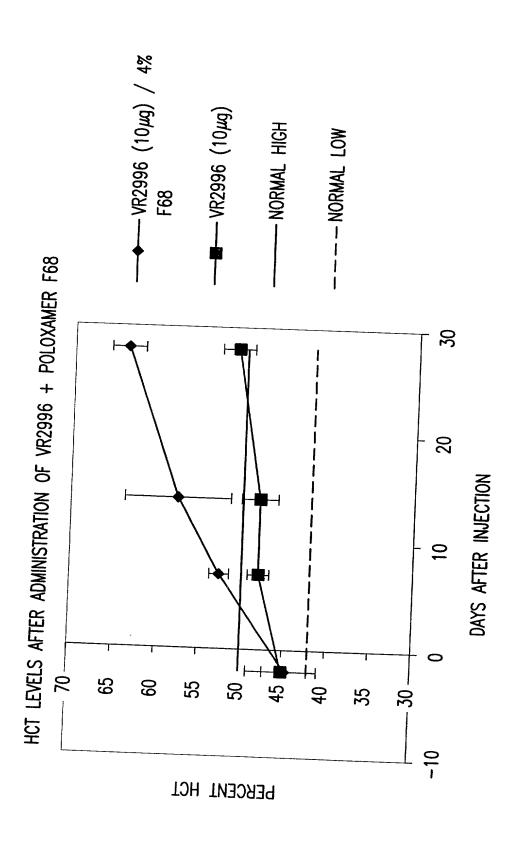
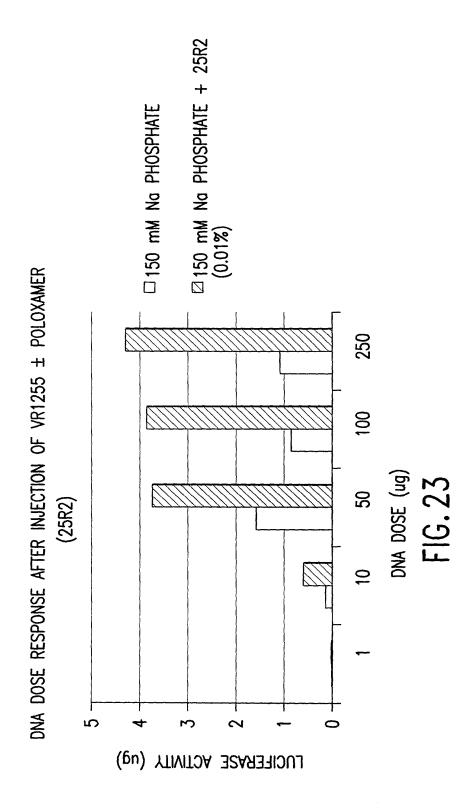
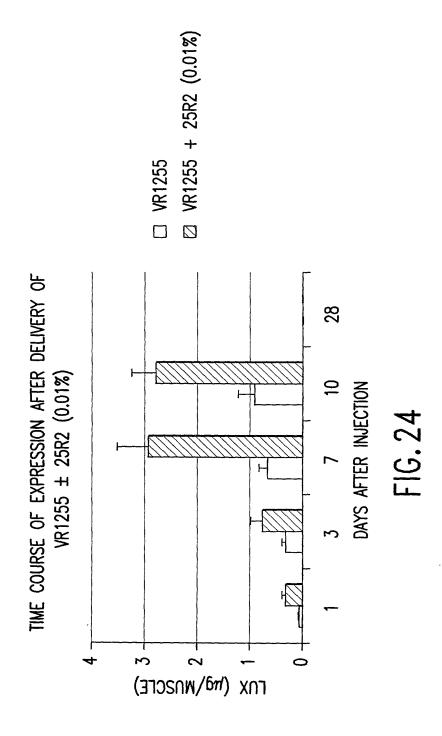


FIG. 22

Appl. No. 09/839,574; Group Art Unit: 1646
Dkt. No. 1530,0180002/EKS/EH;
Inventors: Manthorpe et al.; Tel: 202/371-2600
Title: Compositions and Methods for in vivo Delivery of Polynucleoride-Based Therapeutics

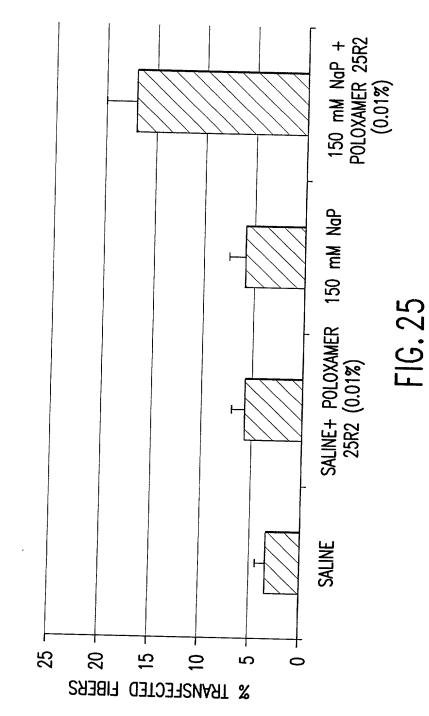


Appl. No. 09/839,574; Group An Unit: 1646
Dkt. No. 1530.0180002/EKS/EJH;
Inventors: Manthorpe et al.; Tel: 202/371-2600
Polynucleotide-Based Thetapeutics
Polynucleotide-Based Thetapeutics



ppl. No. 09/839,574; Group Art Unit: 1646 kt. No. 1530.0180002/EKS/EJH; nventors: Manthorpe et al.; Tel: 202/371-2600 itle: Compositions and Methods for in vivo Delivery of olymucleotide-Based Therapeutics



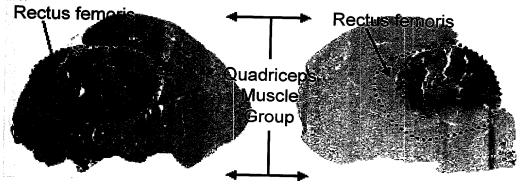


Sheet 32 of 32

Appl. No. 09/839,574; Group Art Unit: 1646
Dkt. No. 1530.0180002/EKS/EJH;
Inventors: Manthorpe et al.; Tel: 202/371-2600
Title: Compositions and Methods for in vivo Delivery of

Polynucleotide-Based Therapeutics

## Targeted injections of 50 $\mu$ g $\beta$ -gal pDNA into murine rectus femoris (10 $\mu$ m section stained with x-gal)



pDNA in saline, average transfection at 7 days

pDNA in Na-P + 25R2, average transfection at 7 days

FIG. 26